AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application.

Claim 1 (Cancelled).

2. (Currently Amended) A separation device comprising:

a feed channel including a shear region;

a plurality of permeate passages operatively associated with the shear region of the feed channel, the plurality of permeate passages including at least first and second permeate passages isolated from one another; and

a porous medium positioned between the shear region of the feed channel and the permeate passages, wherein the shear region is positioned along a first side of the porous medium and the plurality of permeate passages are positioned along a second, opposite side of the porous medium, each permeate passage fluidly communicating with the shear region through the porous medium.

3. (Currently Amended) A separation device comprising:

a feed channel including a shear region;

a plurality of permeate passages operatively associated with the shear region of the feed channel;

at least first and second flow/pressure control devices, each control device being arranged to control permeate flow or pressure within at least one permeate passage independently of the flow or pressure within another permeate passage; and

a porous medium positioned between the shear region of the feed chamber and the permeate passages, wherein the shear region is positioned along a first side of the porous medium and the plurality of permeate passages are positioned along a second, opposite side of the porous medium, each permeate passage fluidly communicating with the shear region through the porous medium.

Claims 4-7 (Cancelled).

8. (New) The separation device according to claim 2, wherein each permeate passage has a width in a feed flow direction, and the width of the permeate passage in the feed flow direction corresponds to a segment of the shear region.

9. (New) The separation device according to claim 8, wherein the width of each permeate passage in the feed flow direction corresponds to less than 75% of the shear region.

10. (New) The separation device according to claim 8, wherein the width of each permeate passage in the feed flow direction corresponds to less than 10% of the shear region.

11. (New) The separation device according to claim 2, wherein each permeate passage has a width in a feed flow direction, the width having a leading edge and a trailing edge, the width having a dimension that provides a difference in transmembrane pressure from the leading edge to the trailing edge on the order of about 10 psi or less.

12. (New) The separation device according to claim 2, wherein each permeate passage has a width in a feed flow direction, the width having a leading edge and a trailing edge, the width having a dimension that provides a difference in transmembrane pressure from the leading edge to the trailing edge on the order of about 1 psi or less.

13. (New) The separation device according to claim 2, wherein the permeate passages are isolated from one another to permit an independent permeate flow or pressure within each permeate flow passage.

14. (New) The separation device according to claim 3, wherein each permeate passage has a width in a feed flow direction, and the width of the permeate passage in the feed flow direction corresponds to a segment of the shear region.

15. (New) The separation device according to claim 14, wherein the width of each permeate passage in the feed flow direction corresponds to less than 75% of the shear region.

16. (New) The separation device according to claim 14, wherein the width of each permeate passage in the feed flow direction corresponds to less than 10% of the shear region.

17. (New) The separation device according to claim 3, wherein each permeate passage has a width in a feed flow direction, the width having a leading edge and a trailing edge, the width having a dimension that provides a difference in transmembrane pressure from the leading edge to the trailing edge on the order of about 10 psi or less.

18. (New) The separation device according to claim 3, wherein each permeate passage has a width in a feed flow direction, the width having a leading edge and a trailing edge, the width having a dimension that provides a difference in transmembrane pressure from the leading edge to the trailing edge on the order of about 1 psi or less.

19. (New) The separation device according to claim 3, wherein the flow/pressure control devices are arranged to control the permeate flow locally over a feed flow path length.

20. (New) The separation device according to claim 19, wherein the flow/pressure control devices are arranged to provide local control of the permeate flow over a feed flow path length, wherein the local control corresponds to the widths of the permeate passages in the feed flow direction.

21. (New) The separation device according to claim 19, wherein the flow/pressure control devices are arranged to incrementally control transmembrane pressure along the length of the shear region.

22. (New) The separation device according to claim 3, wherein the flow/pressure control devices include valves.

23. (New) The separation device according to claim 3, wherein the flow/pressure control devices include flow restrictors.

24. (New) The separation device according to claim 3, wherein the flow/pressure control devices are arranged to supply permeate to a common permeate manifold.